

ABSTRACT

A brake rotor and methods for cooling and/or removing debris from a brake rotor are provided. The brake rotor may include a first and second annular braking surfaces jointly defining inner and outer circumferential surfaces and a central portion and a hat portion disposed in the central portion and adapted for mounting the rotor to a vehicle. The rotor may also include a plurality of vanes provided between the inner and outer circumferential surfaces, which may define a plurality of corresponding flow channels between at least a pair of vanes. Each flow channel may include a first flow channel opening (e.g., inlet) provided near the central region and a second flow channel opening (e.g., outlet) provided near a periphery of the brake rotor. The rotor and methods also may include a plurality of first slots provided on the first annular braking surface and a plurality of second slots provided on the second annular braking surface corresponding to the plurality of first slots. At least one first opening may be included within one or more slots. Similarly, at least one second opening may be provided within each second slot. Each second opening of each second slot may correspond substantially to and fluid communicate with a first opening of a first slot.